REMARKS

I. Claim Rejections under 35 U.S.C. § 103 based on Kaufman and Takeo

Claims 1-23 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 7,006,862 (Kaufman) in view of U.S. Patent No. 6,125,166 (Takeo).

Claims 1, 10, and 15

Claim 1 recites gating a medical procedure based on the first composite image (wherein the first composite image is determined based on first and second images that are real-time images). Claims 10 and 15 recite similar limitations. Kaufman does not disclose or suggest gating a medical procedure based on the composite image determined using real-time images. According to the Office Action, column 9, line 17 of Kaufman allegedly discloses composite images, and column 8, lines 15-25 allegedly disclose gating a radiation therapy based on the composite image. However, Applicant respectfully submits that the composite image of Kaufman is used to determine calcium detection or 3-D rendering (see abstract and column 8, lines 15-16). Notably, the performance of calcium detection and 3-D rendering does not involve any *gating* (e.g., the process does not require an execution of a task by a certain time), and thus, Kaufman does not disclose or suggest gating a medical procedure based on the composite image. Further, Applicant respectfully notes that calcium detection and 3-D rendering described in Kaufman are performed retrospectively - i.e., long after the projection images are obtained (see also, title). Thus, the calcium detection and 3-D rendering of Kaufman do not use *real-time* images.

Also, according to the Office Action, column 14, lines 60-62 of Kaufman allegedly disclose gating based on data obtained from images. However, as discussed in the previous response, this passage of Kaufman actually does not disclose or suggest the above limitations. Rather, Kaufman discloses a method of gating image scans to obtain projection image(s) (13:65-14:39). In particular, Kaufman discloses a self-gating method (14:10-24), in which images that correspond to the heart being in diastole are selected (14:22-24), and the selected images are then used to form the coronal/sagittal projection image (14:36-39). Thus, Kaufman actually discloses gating a selection of images, and using the selected images to determine a projection image. Applicant respectfully notes that Kaufman does not disclose or suggest obtaining a composite image first, and then gating a medical procedure based on such composite image, but rather, selected images from self-gating are used to form a projection image.

Takeo also does not disclose or suggest the above limitations, and therefore fails to make up the deficiencies present in Kaufman. In particular, Takeo discloses a method of forming an energy subtraction image, which is used for diagnosis of an illness (3:47-54), and not for gating a medical procedure.

For at least the foregoing reasons, claims 1, 10, and 15, and their respective dependent claims, are believed allowable over Kaufman, Takeo, and their combination.

Dependent claims 2-9, 11-14, 16-23, and 64-66

Applicant notes that the Office Action did not specifically identify where the elements of the dependent claims 2-9, 11-14, 16-23, and 64-66 are found, and that to the extent that these elements are found in the secondary reference Takeo, the Office Action did not provide a motivation to combine Takeo with Kaufman with respect to these elements. Under the ruling of

the Supreme Court in *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), the element being combined must be known, and that there must be a motivation to combine such element. Thus, Applicant respectfully submits that a prima facie case of the § 103 rejection has not been established for the above dependent claims, and requests that the § 103 rejection for these claims be withdrawn.

II. Claim Rejections under 35 U.S.C. § 103 based on Kaufman, Takeo, and Fitzgerald

Claims 24-29, 32, 33, 34-39, and 40-48 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kaufman in view of Takeo, and further in view of U.S. Patent Application Publication 2005/0027196 (Fitzgerald).

Claims 24, 34, and 40

Claim 24 recites providing a plurality of templates, each of the templates having an image and treatment data, and registering the input image with one of the templates. Claims 34 and 40 recite similar limitations. Applicant agrees with the Examiner that Kaufman and Takeo do not disclose or suggest providing templates that include both image and treatment data. According to the Office Action, paragraphs 12 and 23 of Fitzgerald allegedly disclose providing a plurality of templates, each of which having an image and treatment data. Applicant respectfully disagrees. Fitzgerald discloses a treatment plan for radiation therapy, but there is nothing in Fitzgerald that discloses or suggests that the treatment plan has *a plurality of templates*, each of which having an image and treatment data. For at least the foregoing reasons, claims 24, 34, and 40, and their respective dependent claims, are believed allowable over Kaufman, Takeo, Verard, and their combination.

Claims 25, 35, and 41

Claim 25, which depends from claim 24, further recites that the act of registering comprises selecting a template from the plurality of templates that *best matches an image* in the input image, wherein each template comprises an image and treatment data (Emphasis Added). Claims 35 and 41 recite similar limitations. None of the cited references discloses or suggests the above limitations. For these additional reasons, claims 25, 35, and 41 are believed allowable.

Dependent claims 25-29, 31-33, 35-39, and 41-48

Applicant notes that the Office Action did not specifically identify where the elements of the dependent claims 25-29, 31-33, 35-39, and 41-48 are purportedly found, and did not provide a motivation to combine Takeo and Fitzgerald with Kaufman with respect to these elements. Under the ruling of the Supreme Court in *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), the element being combined must be known, and that there must be a motivation to combine such element. Thus, Applicant respectfully submits that a prima facie case of the § 103 rejection has not been established for the above dependent claims, and requests that the § 103 rejection for these claims be withdrawn.

III. Claim Rejections under 35 U.S.C. § 103 based on Kaufman, Takeo, and Verard

Claims 49-66 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kaufman in view of Takeo, and further in view of U.S. Patent Application Publication 2004/0097805 (Verard).

Claims 49, 55, and 58

Claim 49 recites gating a medical procedure based on the determined position of the target region. Claims 55 and 58 recite similar limitations. Kaufman does not disclose or suggest the above limitation. Rather, Kaufman discloses gating a collection of images based on a size of the heart (14:10-24), and not based on a position of a target region. Takeo and Verard also do not disclose or suggest the above limitation, and are not being relied upon for the disclosure of the above limitation. Since none of the cited references discloses or suggests the above limitation, they cannot be combined to form the subject matter of claims 49, 55, and 58.

According to page 2 of the Office Action, column 8, lines 30-33 of Kaufman allegedly discloses determining a position of a target region. However, this cited passage of Kaufman actually discloses selecting an image slice that has the brightest pixel, and using the selected slice in a calcium scoring study. Applicant respectfully notes that selecting a slice with the brightest pixel is not the same as determining a position of a target region. This is because selecting a slice with the brightest pixel does not determine the position of the target region. Also, as discussed, the calcium scoring study in Kaufman does not involve any gating, nor does it involve gating based on a determined position of a target region.

Takeo and Verard also do not disclose or suggest the above limitation, and therefore fail to make up the deficiency present in Kaufman. Since none of the cited references discloses or suggests the above limitation, they cannot be combined to form the subject matter of the above claims. For at least the foregoing reasons, claims 49, 55, and 58, and their respective dependent claims, are believed allowable over Kaufman, Takeo, Verard, and their combination.

Dependent claims 50-54, 56, 57, and 59-63

Applicant notes that the Office Action did not specifically identify where the elements of the dependent claims 50-54, 56, 57, and 59-63 are found, and did not provide a motivation to combine Takeo and Verard with Kaufman with respect to these elements. Under the ruling of the Supreme Court in *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), the element being combined must be known, and that there must be a motivation to combine such element. Thus, Applicant respectfully submits that a prima facie case of the § 103 rejection has not been established for the above dependent claims, and requests that the § 103 rejection for these claims be withdrawn.

CONCLUSION

Based on the foregoing remarks, all claims are believed allowable. If the Examiner has any questions or comments regarding this amendment, the Examiner is respectfully requested to contact the undersigned at the number listed below.

To the extent that any arguments and disclaimers were presented to distinguish prior art, or for other reasons substantially related to patentability, during the prosecution of any and all parent and related application(s)/patent(s), Applicant(s) hereby explicitly retracts and rescinds any and all such arguments and disclaimers, and respectfully requests that the Examiner re-visit the prior art that such arguments and disclaimers were made to avoid.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Bingham McCutchen's Deposit Account No. **50-4047,** referencing billing number **VM7031422001**. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Bingham McCutchen's Deposit Account No. **50-4047,** referencing billing number **VM7031422001**.

Respectfully submitted,

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